United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N	ID0001198	13091 7	S	R	2

Remarks

21 ____ 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	BI	QA	Reserved
67 14 0 69	70 4	71 N	72 N	73 ____ 74 75 ____ 80

Section B: Facility Data

Name and Location of Facility Inspected *(For industrial users discharging to POTW, also include POTW name and NPDES permit number)*

P4 Production, LLC. (Monsanto)
1853 Highway 34
Soda Springs, ID 83276

Entry Time/Date	Permit Effective Date
9:15 am 9/17/2013	09/21/1982
Exit Time/Date	**Permit Expiration Date**
2:40 pm 9/17/2013	09/21/1987; Admn Cont

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

Molly Prickett - Environmental Engineer (208) 547-4300
Jason Cunningham - Engineering & Technical Unit Lead " "
Rachel Roskelley - Sr. Environmental Engineer " "
Dawn Blevins - Sr. Environmental Regulatory Specialist " "

Other Facility Data *(e.g., SIC NAICS, and other descriptive information)*

NAICS#:

325180 - phosphorus production

331110 - electrometallurgical ferroalloy manufacturing

Name, Address of Responsible Official/Title/Phone and Fax Number

Angela Aalbers - EHS Business Unit Leader (208) 547-4300

Contacted ☑ Yes ☐ No

Section C: Areas Evaluated During Inspection *(Check only those areas evaluated)*

✓ Permit	☐ Self-Monitoring Program	☐ Pretreatment	☐ MS4
✓ **Records/Reports**	☐ Compliance Schedules	☐ Pollution Prevention	
✓ Facility Site Review	☐ Laboratory	☐ Storm Water	
✓ Effluent/Receiving Waters	✓ Operations & Maintenance	☐ Combined Sewer Overflow	
✓ Flow Measurement	☐ Sludge Handling/Disposal	☐ Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments

(Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)

SEV Codes SEV Description

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RECEIVED
NOV 29 2013
Inspection & Enforcement Management Unit
(IEMU)

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Patrick Stoll	EPA/R10/IOO (208) 378-5772	11/20/2013
Signature of Management Q A Reviewer	Agency/Office/Phone and Fax Numbers	Date
		11/29/13

EPA Form 3560-3 (Rev 1-06) Previous editions are obsolete.

ICIS (per advance copy)
9-25-2013
JJ Brown

National Pollutant Discharge Elimination System (NPDES)
Inspection Report

P4 Production, LLC – Processing Facility
(a subsidiary of the Monsanto Company)
Soda Springs, Idaho

NPDES Permit # ID0001198

Inspection date: September 17, 2013
Report completion date: November 20, 2013

Prepared by:

Patrick Stoll
U.S. Environmental Protection Agency, Region 10
Office of Compliance and Enforcement
Inspection and Enforcement Management Unit
Idaho Operations Office

Table of Contents

I. Facility Information

Facility Name:	P4 Production, LLC – a phosphorus processing and manufacturing facility (a subsidiary of Monsanto Co.)
NPDES No.:	ID0001198 Effective date: September 21, 1982 Expiration date: September 21, 1987; admin continued
Facility Contact(s):	Molly Prickett, Environmental Engineer Phone: (208) 547-1395 email: molly.prickett@monsanto.com Dawn Blevins, Sr. Environmental Regulatory Specialist Phone: (208) 569-2028 Email: dawn.r.blevins@monsanto.com Rachel Roskelley, Senior Environmental Engineer Phone: (208) 547-1248 Angela Aalbers – EH&S Business Unit Leader (208) 547-4300
Facility Type:	Phosphorus processing/manufacturing, NAICS #325180
Facility Location:	1853 Highway 34 Soda Springs, ID 83276 42.684160; -111.582215
Mailing Address:	1853 Highway 34 Soda Springs, ID 83276
Permitted Outfall Location:	Outfall 001: 42.67507; -111.60168

II. Inspection Information

Inspection Date(s):	September 17, 2013
Inspector(s):	Patrick Stoll, Inspector (lead) EPA Region 10/OCE/IEMU/IOO (208) 378-5772 Wayne Crowther, P.E., Sr. Regional Engineer Idaho Department of Environmental Quality (IDEQ) Pocatello Regional Office; (208) 236-6168

	(Mr. Crowther was present as an observer during the first two hours of the inspection)
Entry Time:	9:15 am
Exit Time:	2:40 pm
Weather Conditions:	55-65° F, breezy, intermittent rain/thunderstorms
Receiving Waters:	Soda Creek (a tributary of the Bear River)
Purpose:	Evaluate the compliance status with respect to the facility's NPDES individual discharge permit

III. Facility Background

P4 Production LLC (P4), a wholly owned subsidiary of Monsanto, operates phosphate mines and an ore processing facility near Soda Springs, Idaho. The P4 phosphorus processing facility (the focus of this inspection) is located along the west side of Highway 34, approximately 1 mile north of Soda Springs (the mines are located 10-20 miles northeast of the town). The facility boundary encompasses approximately 800 acres. The processing plant occupies and generates stormwater runoff from approximately 540 acres.

The mining and processing of phosphate ore conducted by P4/Monsanto dates back to the early 1950's. As noted on Monsanto's web site, "The ore-processing plant…was constructed by the Idaho-based Morrison-Knudsen Company in 1950. The plant produced its first pound of phosphorus in December of 1952".

P4 discharges wastewater composed of non-contact cooling water, boiler blowdown, and stormwater runoff into nearby Soda Creek. The first National Pollutant Discharge Elimination System (NPDES) permit authorizing this discharge became effective on October 21, 1973. The original permit imposed effluent limits on flow, temperature, total phosphorus, suspended solids, and fluoride. The P4 NPDES permit was reauthorized in the early 1980's with an effective date of September 21, 1982.The only effluent limit contained in the "new" permit (other than general prohibition on *floating solids and visible foam*) is related to "thermal loading" (there is an indirect requirement to monitor flow rate and temperature since both are necessary for calculating the thermal load). The permitted thermal load in the discharge to Soda Creek is 1.32×10^9 BTU/day. The 1982 NPDES permit was scheduled to expire on September 21, 1987 but has been administratively continued; the discharge to Soda Creek is currently subject to the conditions outlined in the 1982 permit.

IV. Inspection Entry

This was an announced inspection with less than 24 hours advanced notice. I had previously invited Wayne Crowther from the Idaho Department of Environmental

Quality (IDEQ) Pocatello regional office to accompany me on the inspection. Mr. Crowther and I arrived at the P4 office, in separate vehicles, shortly after 9:00 am the morning of September 17, 2013. We checked in at the security office where we were required to watch a short orientation video describing the hazards and safety requirements at the P4 facility. We were also asked to sign the facility's visitor log. I declined to sign the log since it included a statement indicating that the visitor would not disclose any information obtained during the site visit. The security guard agreed to waive the need to sign the log for both myself and Mr. Crowther.

Upon completion of the video and a brief safety exam, I met with Molly Prickett, an Environmental Engineer recently hired to manage NPDES compliance issues for the facility, and Dawn Blevins, a P4 Senior Environmental Regulatory Specialist. Ms. Prickett and Ms. Blevins led me and Mr. Crowther from the security office to a conference room located in a nearby administration building. In the conference room I was introduced to P4 employees Jason Cunningham, Engineering and Technical Unit Lead; Angela Aalbers, EH&S Business Unit Leader; and Senior Environmental Engineer Rachel Roskelley (I had previously met Ms. Roskelley during an inspection of nearby P4 mining operations a year earlier). I presented my EPA inspection credentials to the P4 staff and explained the purpose of the inspection. I also explained that I had invited an IDEQ representative, Mr. Crowther, to accompany me on the inspection (Mr. Crowther noted that he had a previous commitment and would need to leave the inspection by 11:30 am).

V. Purpose and Scope of the Inspection

I explained to the P4 staff that the purpose of the inspection was to evaluate the facility's compliance with respect to the conditions and requirements outlined in the facility's NPDES permit. To achieve this goal, the scope of the inspection would include the following elements:

1. An opening conference during which time the P4 staff could describe the facility operations in general and the discharge to Soda Creek in particular.
2. A tour of the facility operations including a visit to the wastewater treatment pond and the outfall where wastewater is discharged to Soda Creek.
3. A review of the instruments used to monitor the flow and temperature of the discharge to Soda Creek, the calibration records for the instruments, and the bench sheets or log used to record the data.
4. Sampling of the discharge to Soda Creek.
5. A closing conference to summarize observations and issues noted during the inspection.

VI. Opening Conference

All of the individuals noted previously in this report were present during the opening conference. The information included in this report was provided by one or more of the P4 employees identified herein.

After explaining the purpose and the scope of the inspection, I noted that the current (1982) permit provided very little information about the source and/or composition of the wastewater discharge. Though more detailed information was available in the original 1973 permit, I explained that one of my inspection goals was to ascertain the composition and nature of the current discharge from the facility. The information I subsequently obtained is summarized in greater detail in the next section of this report.

As part of the opening conference I also noted that I planned to collect samples of the discharge to Soda Creek during the course of the inspection. Since the existing permit had been written years earlier and only imposed effluent limits on thermal loading, I explained that it was important to characterize, at least in part, the chemical and physical nature of the wastewater discharged from the facility at the present time.

The orientation video I viewed at the security check-in outlined very strict company policies concerning photography at the P4 facility. During the opening conference, I also noted that there would likely be many areas associated with the permitted wastewater discharge that I would need to photograph as part of the inspection. Mr. Cunningham agreed to allow me to take photographs as long he had an opportunity to view the photos prior to my departure from the facility to make sure the photos did not include anything that might be considered confidential business information.

VII. Permitted Wastewater Discharge to Soda Creek at Outfall 001

The permitted discharge from P4 comingles wastewater from three different sources:

- Non-contact cooling water,
- Boiler blowdown, and
- Stormwater from the site.

Non-contact cooling water

The non-contact cooling water component of the P4 discharge is used to provide cooling for many different types of equipment at the facility (e.g., furnace shells, kiln boring bar, chunkbreaker and shreader rolls). All of the cooling water is reportedly contained within the cooling water system. According to P4 personnel, no water treatment chemicals (e.g., scale or microbial inhibitors) are added to the non-contact cooling water (as explained in the next paragraph, P4 had previously provided EPA with erroneous information concerning the use of water treatment chemicals in the cooling water). The temperature differential between the intake and the eventual discharge of the non-contact cooling water is reported to be low enough that the formation/deposition of mineral scale is not an issue within the cooling water system.

Boiler blow-down

Boilers at P4 are used to generate steam for numerous applications at the P4 facility.

As water is converted to steam within the boilers, the concentration of scale-producing impurities increase. To reduce the amount of impurities, some of the water within the boiler is routinely purged (boiler blowdown) to allow for the introduction of fresh water.

Scale inhibitors are used routinely in the boiler water at P4 to minimize the formation of mineral scale within the system. Chemical residues and byproducts from the scale inhibitors are routinely discharged in the boiler blowdown. These residues become part of the permitted wastewater discharge from the facility to Soda Creek. For a number of years, P4 used a sodium hexametaphosphate solution as the scale inhibitor for the facility boilers. According to Ms. Roskelley, P4 switched to a new scale inhibitor in the latter part of 2012. The decision to switch was evidently based on the fact that the older scale inhibitor contained phosphorus. During this same time period, IDEQ was in the process of finalizing a revised Total Maximum Daily Load, along with corresponding waste load allocations, for the Bear River (to which Soda Creek is a tributary). On October 11, 2012, P4 environmental engineer Darsen Gaughan sent a letter to EPA Region 10 NPDES Compliance Unit Manager Jeff KenKnight notifying Mr. KenKnight that P4 was preparing to replace the sodium hexametaphosphate solution with a phosphorus-free Nalco product (3D Trasar 3D120 – see MSDS in Appendix B). In her letter, Ms. Gaughan (who is no longer with P4) erroneously reported that the scale inhibitor was used in the **non-contact cooling water**. According to Ms. Roskelley, who was involved with the change-out of the scale inhibitor, Ms. Gaughan's reference to the non-contact cooling water was incorrect – the scale inhibitor was used to treat the ***boiler water***, **not** the ***non-contact cooling water***.

Stormwater

During a precipitation event, there is a potential for stormwater runoff from many of the exposed surface areas within the 540 acres of the active portion of the P4 facility. Since much of this area is unpaved, a certain amount of infiltration is likely to occur. Stormwater berms and basins located along the southern and western border of the slag pile facilitate infiltration as well. Stormwater runoff that does not infiltrate or is not diverted from the site is likely to enter one of the 30 storm drains located around the active portions of the facility (see Photos 3-4). According to P4 staff, many (if not most) of the storm drains are equipped with collection basins that are cleaned out on a regular basis. I asked if the sediment from any of the basins had ever been characterized to determine whether or not the material was subject to regulation as a hazardous waste under the Recourse Conservation and Recovery Act (RCRA). I was provided with a copy of the laboratory analysis associated with the sediment from one such basin. The lab report, dated 02/10/2011, suggested that the sediment from that particular basin was not subject to regulation as a hazardous waste. I did note, however, that total phosphate (as P) was reported to be present at 3.13% in the sediment sample.

Based upon the Standard Industrial Classification system, P4 falls within the scope of SIC code 1475. Mineral mining and dressing facilities with this SIC code are typically

subject to the requirements of EPA's Multi-Sector General Permit for Stormwater Discharges Associated With Industrial Activity (MSGP). As noted previously, P4's wastewater discharge is currently regulated under an NPDES permit that was last reauthorized in 1982. Since the 1982 permit included authorization for stormwater discharges, P4 is not required to have stormwater coverage under the MSGP unless or until a new individual NPDES permit (one that does not include provisions for stormwater discharges) is authorized.

Wastewater Management

Comingled wastewater from the three sources noted above is piped to a wastewater treatment pond (see Photos 3, 7, and 8) prior to discharge to Soda Creek. The pond is located approximately 1365' from the fenced southwest corner of the active portion of the facility. The capacity of the pond is approximately 335,000 cubic feet/2.5 M gallons. The treatment taking place within the pond is primarily physical in nature; some settling of solids occurs along with aeration and cooling.

Within the pond, wastewater flows from the inlet located at the southeast end of the oval shaped pond to the outlet at the northwest end of the pond (see Photo 8). From the pond, the wastewater is pumped through a Parshall flume housed in a small equipment building adjacent to the wastewater treatment pond to Outfall 001 (the only permitted outfall) at Soda Creek. Wastewater is discharged from numerous ports located along the length of a large diameter pipe spanning the width of Soda Creek (see Photo 16-17). The distance from the wastewater treatment pond to the outfall is approximately 1675'. Measurements of the discharge flow rate and temperature occurs within the equipment building next to the treatment pond.

The wastewater discharge from P4 to Soda Creek is continuous. Discounting significant stormwater events, the flow rate is approximately 2100 GPM. The inflow is derived from four separate wells located on-site.

VIII. Facility Tour

Upon completion of the opening conference, Ms. Roskelley and Ms. Prickett drove Mr. Crowther and me around the facility to provide us with an overview of facility operations. During the tour I made a number of photographs documenting various operations and components associated with the wastewater management system.

One of our last stops on the production facility tour was at the electrical shop where records for the site monitoring equipment are maintained. I was interested in reviewing the calibration records for the flow and temperature monitoring instruments used to collect the data needed to verify compliance with permit effluent limits. P4 appears to have a very detailed and comprehensive system in place for tracking, calibrating, and servicing the various types of monitoring equipment used throughout the facility. This includes the ***Milltronics Multiranger Plus*** open channel ultrasonic flow meter, the ***Omega*** temperature sensor, and the ***Yokogawa*** temperature data recorder used to

monitor the discharge from the wastewater treatment pond to Soda Creek. Instead of the annual calibration recommended by the equipment manufacturer for each of these devices, P4 calibrates each instrument on a quarterly basis and maintains detailed calibration records (see Photos 14-15 and Appendix C). The only issue I noted with respect to instrument calibration is that the calibration schedule does not appear to be documented in the facility records (e.g., Standard Operating Procedures).

As announced earlier, Mr. Crowther left the site shortly after 11:30 am. After his departure, Ms. Prickett and Ms. Roskelley drove me to the wastewater treatment pond located in a separately fenced area southwest and outside of the main production area. As previously noted during the last inspection at the site (conducted by Joe Roberto and Eva Chun/DeMaria on April 29, 2005), I observed a considerable amount of algae growing in the wastewater treatment pond (see Photo 8). After viewing the pond, I entered the locked equipment shed located nearby to examine the Parshall flume, the flow and temperature monitoring instruments and the associated log sheet (see Photos 9-13). I noted that the temperature reading for the current day had already been recorded on the log sheet.

Once the inspection of the wastewater treatment pond and the equipment used to monitor the discharge was complete, Ms. Prickett and Ms. Roskelley drove me to the discharge location at Soda Creek. The discharge at permitted Outfall 001 occurs approximately one third of a mile downstream from Hooper Springs Park near a streamside bike/walking path. In addition to viewing the discharge location, I also collected samples of the discharge for laboratory analysis.

Note: ***Potential RCRA/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) issue***: During our tour of the facility, I observed a large rotary kiln on-site. A common maintenance issue associated with rotary kilns involves the need to replace the refractory bricks that line the inside of the kiln – the bricks become friable over time and must be replaced on a periodic basis. I have noted on many previous occasions that the refractory bricks used in a rotary kiln often contain chromium at levels high enough to equal or exceed the Toxicity Characteristic Leaching Procedure (TCLP) regulatory level for chromium specified at 40 CFR 261.24. Waste bricks that equal or exceed the TCLP regulatory level for chromium are typically subject to regulation under RCRA as a hazardous waste (EPA waste code D007). During the course of this inspection, I learned that piles of spent refractory bricks are stored in an outdoor area at the facility. Even if the bricks contained sufficient chromium to exceed the TCLP regulatory level, P4 has pointed out that the "Bevill Exclusion" for mining waste at 40 CFR 261.4 (b)(7) excludes the bricks from typical hazardous waste management requirements. Though exempt from RCRA, the spent refractory bricks may be a hazardous substance under CERCLA and therefore subject to CERCLA liability issues.

IX. Discharge Monitoring/Sample Collection at Soda Creek/Outfall 001

As noted previously, I planned to sample the P4 wastewater discharge as part of this inspection. During the opening conference with the P4 staff, I explained that laboratory analysis of the samples would include the measurement of total phosphorus, various metals (Cd, Cr, Cu, Pb, Ni, Se, Ag, and Zn), hardness, total suspended solids, and fluoride. Samples were collected and managed in accordance with the ***Quality Assurance Project Plan For P4 Production LLC Phosphorus Plant NPDES Inspections*** (QAPP) developed specifically for this inspection.

When I announced during the opening conference that I intended to sample the discharge to Soda Creek, I also indicated that I had brought along additional sample containers to provide P4 with sample splits. I was later informed by P4 staff that they would be using their own containers to collect the splits. Before leaving the production area to visit the wastewater treatment pond and the discharge location, Ms. Roskelley expressed concerns about the ability to collect a split sample that was a true duplicate of the samples I would be collecting. Ms. Roskelley asked if I would consider using a plastic bucket to collect a single grab sample that could be used to fill all of the sample containers. The sample collection method she proposed involved the use of a new 5-gallon HDPE plastic bucket. Though I was initially reluctant to employ this approach, I realized that it offered a number of benefits. Even though I had brought a strong sampling pole, I had some concerns about the ability to successfully collect samples in small-mouth bottles from a discharge that had a flow rate in excess of 2000 GPM. As long as I could verify that the bucket was new and triple rinsed with the wastewater discharged to Soda Creek, I decided to approve the bucket approach for the collection of a single large volume grab sample (see Photos 16-17). The single large grab sample did deliver sufficient water to fill three sets of sample bottles (one base and one QA duplicate for me and one set of splits for P4). All samples (excluding the P4 splits) and the Chain of Custody forms I had prepared and sealed in a plastic bag were packaged in a cooler with ice and prepared for shipment to EPA Region 10's Manchester Environmental Laboratory (MEL) in Port Orchard, Washington. I delivered the sealed cooler containing the samples to the United Parcel Service customer service center in Twin Falls, Idaho the next day. From Twin Falls, the cooler with the samples was shipped overnight to the MEL.

X. Closing Conference

Once the sample collection from the discharge location was complete, we returned to the administration building conference room for a closing conference. All those who were present for the opening conference were also in attendance at the closing.

At the start of the closing conference, I asked Mr. Cunningham to review my photos to insure they did not reveal any confidential business information. None were disputed.

I then shared my impression that the facility appeared to be generally well managed (from a wastewater management standpoint) and did not appear to exhibit any obvious

areas of concern with respect to compliance with the requirements of the existing NPDES discharge permit. Since this permit has not been reauthorized since 1982, I noted that there was a good chance that P4 would need to apply for a new permit sometime in the not-too-distant future. I also noted that a new permit would likely impose more stringent effluent limits than the existing permit.

I commended the facility on its decision to calibrate the instruments used to verify compliance with the effluent limits in the existing permit on a quarterly basis as opposed to the annual calibration recommended by the equipment manufacturers. Since the current calibration schedule was not spelled out in any facility Standard Operating Procedures (SOPs) or sampling plan, I suggested that the schedule should be formalized in a written facility document.

Upon conclusion of the closing conference, I thanked the P4 staff for their time and invited them to contact me if they had any further questions about the inspection.

XI. Discharge Monitoring Sample Results

On November 6, 2013 I received the complete set of analytical results for the P4 wastewater discharge samples I submitted to the MEL. The results are summarized in the table below.

Sample No.	Sample location	Constituent	Results
13374300 (1)	Outfall 001	TSS	7.3 mg/l
13374300 (1)	Outfall 001	Hardness as CaCO3	584 mg/l
13374300 (1)	Outfall 001	Fluoride	0.422 mg/l
13374300 (1)	Outfall 001	Chromium	10 µg/l
13374300 (1)	Outfall 001	Nickel	11 µg/l
13374300 (1)	Outfall 001	Phosphorus	888 µg/l
13374300 (1)	Outfall 001	Zinc	57.2 µg/l
13374300 (1)	Outfall 001	Copper	2.2 µg/l
13374300 (1)	Outfall 001	Selenium	16.7 µg/l
13374300 (1)	Outfall 001	Silver	0.05 µg/l
13374300 (1)	Outfall 001	Cadmium	9.32 µg/l
13374300 (1)	Outfall 001	Lead	0.1 µg/l
13374300 (1-dup*)	Outfall 001	Hardness as CaCO3	574 mg/l
13374300 (1-dup*)	Outfall 001	Chromium	10 µg/l
13374300 (1-dup*)	Outfall 001	Nickel	10 µg/l
13374300 (1-dup*)	Outfall 001	Phosphorus	885 µg/l
13374300 (1-dup*)	Outfall 001	Zinc	54.8 µg/l
13374300 (1-dup*)	Outfall 001	Copper	2.2 µg/l
13374300 (1-dup*)	Outfall 001	Selenium	16.4 µg/l
13374300 (1-dup*)	Outfall 001	Silver	0.047 µg/l
13374300 (1-dup*)	Outfall 001	Cadmium	9.23 µg/l

13374300 (1-dup*)	Outfall 001	Lead	0.1 µg/l
13374301 **	Outfall 001	TSS	2.3 mg/l
13374301 **	Outfall 001	Hardness as CaCO3	576 mg/l
13374301 **	Outfall 001	Fluoride	0.426 mg/l
13374301 **	Outfall 001	Chromium	10 µg/l
13374301 **	Outfall 001	Nickel	10 µg/l
13374301 **	Outfall 001	Phosphorus	875 µg/l
13374301 **	Outfall 001	Zinc	64.4 µg/l
13374301 **	Outfall 001	Copper	2.3 µg/l
13374301 **	Outfall 001	Selenium	16.7 µg/l
13374301 **	Outfall 001	Silver	0.047 µg/l
13374301 **	Outfall 001	Cadmium	9.22 µg/l
13374301 **	Outfall 001	Lead	0.1 µg/l
13374302	Bottle Blank	Hardness as CaCO3	0.3 mg/l U
13374302	Bottle Blank	Fluoride	0.04 mg/l U
13374302	Bottle Blank	Chromium	10 µg/l U
13374302	Bottle Blank	Nickel	10 µg/l U
13374302	Bottle Blank	Phosphorus	30 µg/l U
13374302	Bottle Blank	Zinc	5 µg/l U
13374302	Bottle Blank	Copper	0.2 µg/l U
13374302	Bottle Blank	Selenium	0.05 µg/l U
13374302	Bottle Blank	Silver	0.025 µg/l U
13374302	Bottle Blank	Cadmium	0.01 µg/l U
13374302	Bottle Blank	Lead	0.05 µg/l U

* Samples 13374300 and 13374301 each involved three sample containers appended as N1 (total phosphorus, metals, hardness), N2 (total suspended solids - TSS), and N3 (Fluoride); as a measure of precision, sample 13374300-N1 was split by the lab with one split serving as a laboratory duplicate.

** Sample 13374301 was the complete duplicate sample (N1, N2, and N3) that I collected in the field (see Photo 18).

U – The analyte was not detected at or above the reported value.

XII. Areas of Concern

1. As noted in **Section X**, the calibration schedule for the various instruments used to monitor and verify compliance with the NPDES permit effluent limitations is not spelled out in any of the facility documents. While this is **not** a requirement of the current NPDES permit, some documentation in the facility records would be useful as a means for demonstrating (to both new employees and future NPDES inspectors) that the facility is committed to a quarterly calibration schedule.

2. Analysis of the wastewater samples I collected from the discharge at Outfall 001 to Soda Creek indicates that phosphorus was present in the discharge at or above 875 µg/l. The P4 discharge into Soda Creek occurs at a location approximately 2.4 miles above the point where Soda Creek flows into the upper end of Alexander Reservoir. Alexander Reservoir is a storage impoundment established along the Bear River adjacent to the town of Soda Springs. Soda Creek, Alexander Reservoir, and the Bear River are all situated within the Bear River Basin/Malad River Subbasin. IDEQ recently completed an addendum to the previously established TMDL for phosphorus (approved by EPA in September 2013) for the Bear River Basin. Within the Bear River reach where Soda Creek discharges, the load and waste-load allocations established by IDEQ are based on achieving a phosphorus target of 50 µg/l. Though the existing NPDES permit does not include an effluent limit for phosphorus, the presence of phosphorus in the P4 wastewater discharge at the levels noted herein may raise other regulatory concerns.

P4 Production, LLC.
Soda Springs, Idaho
Report Completion Date: 11/20/2013

Inspector:

Patrick Stoll, EPA/R10/IOO
Lead Inspector

Appendix A

Photo Log

P4 Production, LLC – Compliance Sampling Inspection
September 17, 2013 – Photo Log

Inspection site or facility name:	P4 Production, LLC (a subsidiary of the Monsanto Company)
Physical Location:	1853 Highway 34 Soda Springs, Idaho 83276
NPDES ID #:	ID0001198
Type of Inspection:	Compliance Sampling (evaluation with sampling)
Date of Inspection:	September 17, 2013
Inspector(s):	Patrick Stoll, EPA/R10/IOO
Image capture device:	Panasonic Lumix DMC-TS4
Location where original/archived images are stored:	Shared Drive: CDBS > APPS > OCE > IEMUnit > Stoll > NPDES_Individual> P4Production > P4_Archive_Photos
Original file type, pixel dimensions, and file #s, (assigned by camera):	JPG; 4000 x 3000 pixels; Image numbers P1000170 through P1000199
Folder name for resized images and pixel dimensions (for use in Photo Log):	P4_LowRes ; 800x600 pixels
Photo Log Image ID #s:	Images numbered: 1-21
Digital images recorded by:	Patrick Stoll unless otherwise noted
Drainage/flow direction:	

P4 Production, LLC; Soda Springs, Idaho
Compliance Sampling Inspection; September 17, 2013

Photo No. 1 – from Google Earth Pro (imagery date 08/12/2013)
An aerial view of the P4 Production facility

Photo No. 2 – from Google Earth Pro (imagery date 08/12/2013)
Overview of the entire P4 Production and wastewater management operations

Photo No. 3 (P1000170)
An example of the numerous storm drains located throughout the production facility

Photo No. 4 (P1000171)
An example of the numerous storm drains located throughout the production facility

Photo No. 5 (P1000173)
A large culvert, shallowly buried along the southern border of the facility, conveys wastewater to the wastewater treatment pond. The vertical culvert is capped with an access manhole cover.

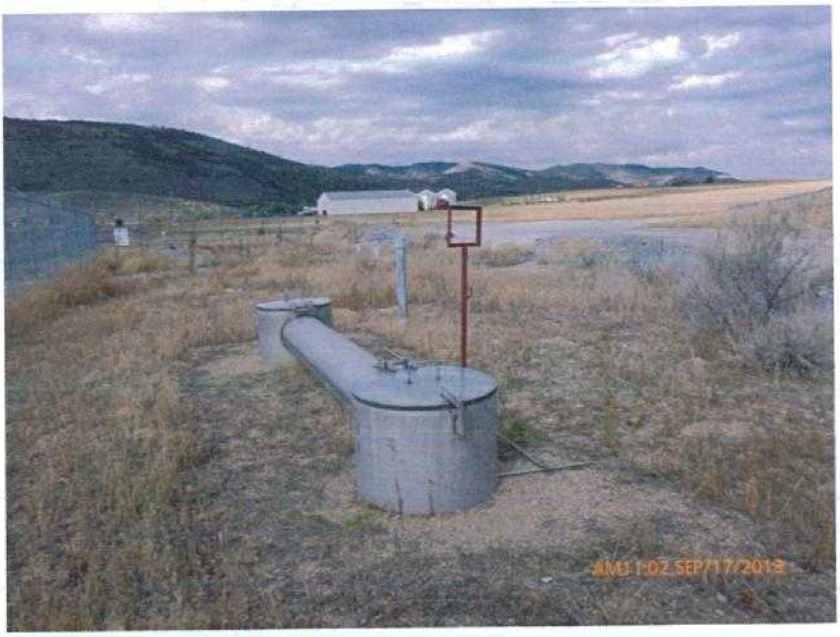


Photo No. 6 (P1000174)
Wastewater flows through this oil-water separator located in the SW corner of the facility property on its way to the treatment pond; monitoring wells (light blue) associated with on-site CERCLA activities are also evident in this photo.

Outlet from pond at NW corner

Inlet to pond at SE corner

Photo No. 7 (P1000178)
The wastewater treatment pond at P4 Production, LLC with aerator operating within the pond

Photo No. 8 (P1000179)
Algae growth at outlet from the wastewater treatment pond

Photo No. 9 (P1000181)
Equipment sheds are located on the west side of the wastewater treatment pond.

Photo No. 10 (P1000182)
A grate covers the Parshall flume used for measuring flow from the wastewater treatment pond to the discharge location at Soda Creek. The ultrasonic transducer appears at the top of the photo. A vertical water depth indicator is also mounted on the inside wall of the flume.

Photo No. 11 (P1000186)
Data recorder for wastewater flow rate and temperature

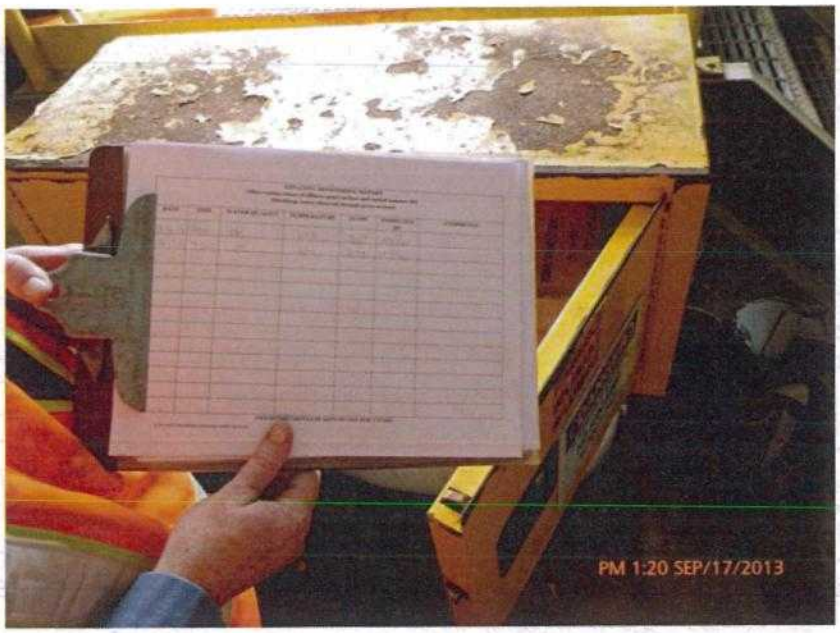


Photo No. 12 (P1000184)
Bench sheets used for recording temperature and flow rate information associated with the wastewater discharge from the treatment pond

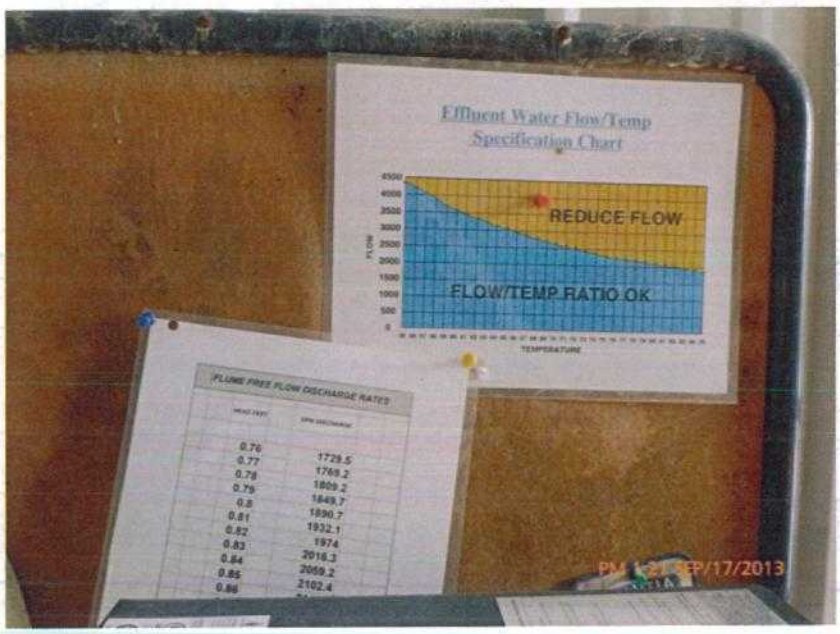


Photo No. 13 (P1000187)
Conversion chart (Effluent Water Flow/Temp Specification Chart) used to determine when the discharge to Soda Creek must be reduced to comply with thermal loading effluent limits

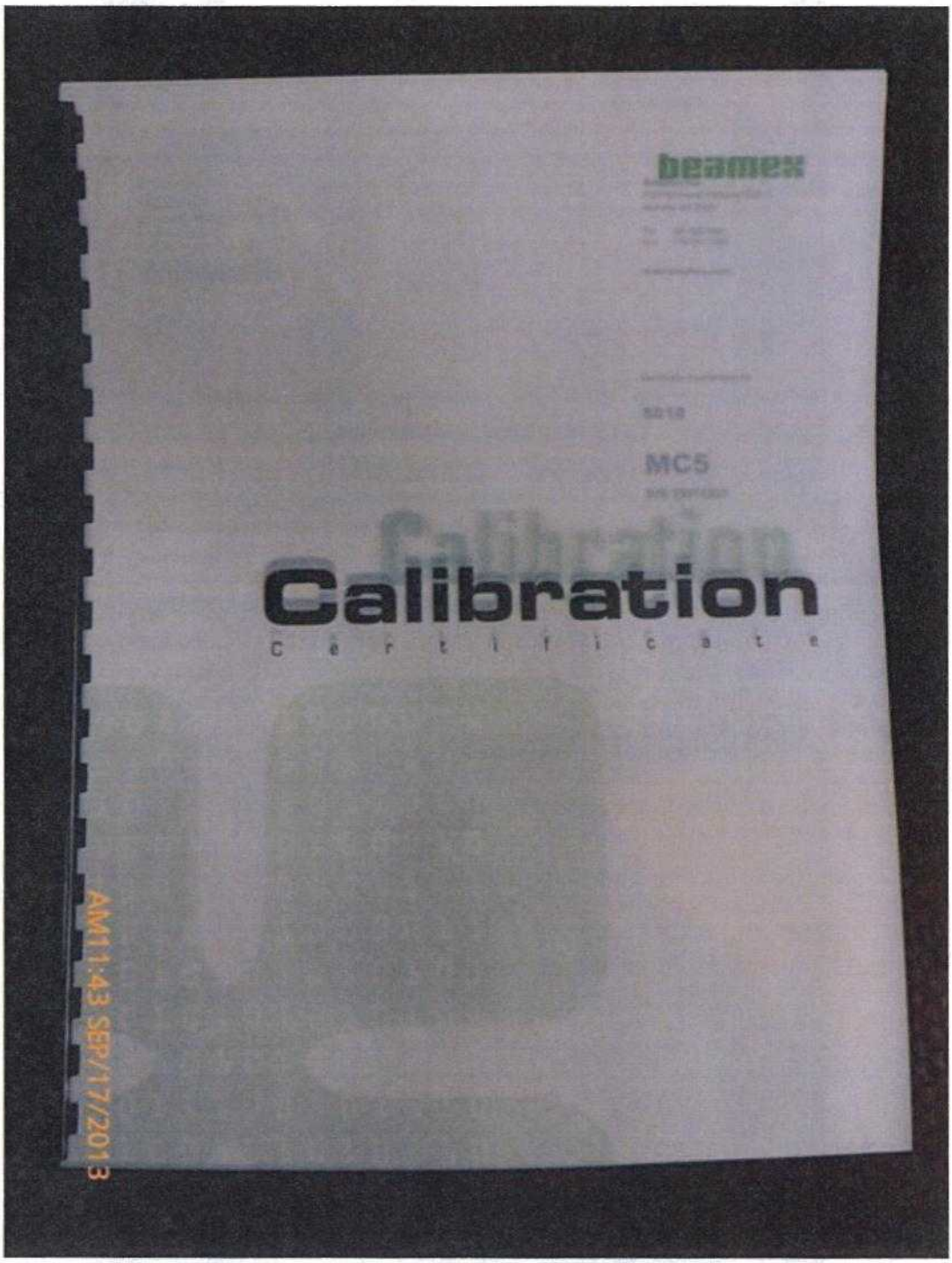
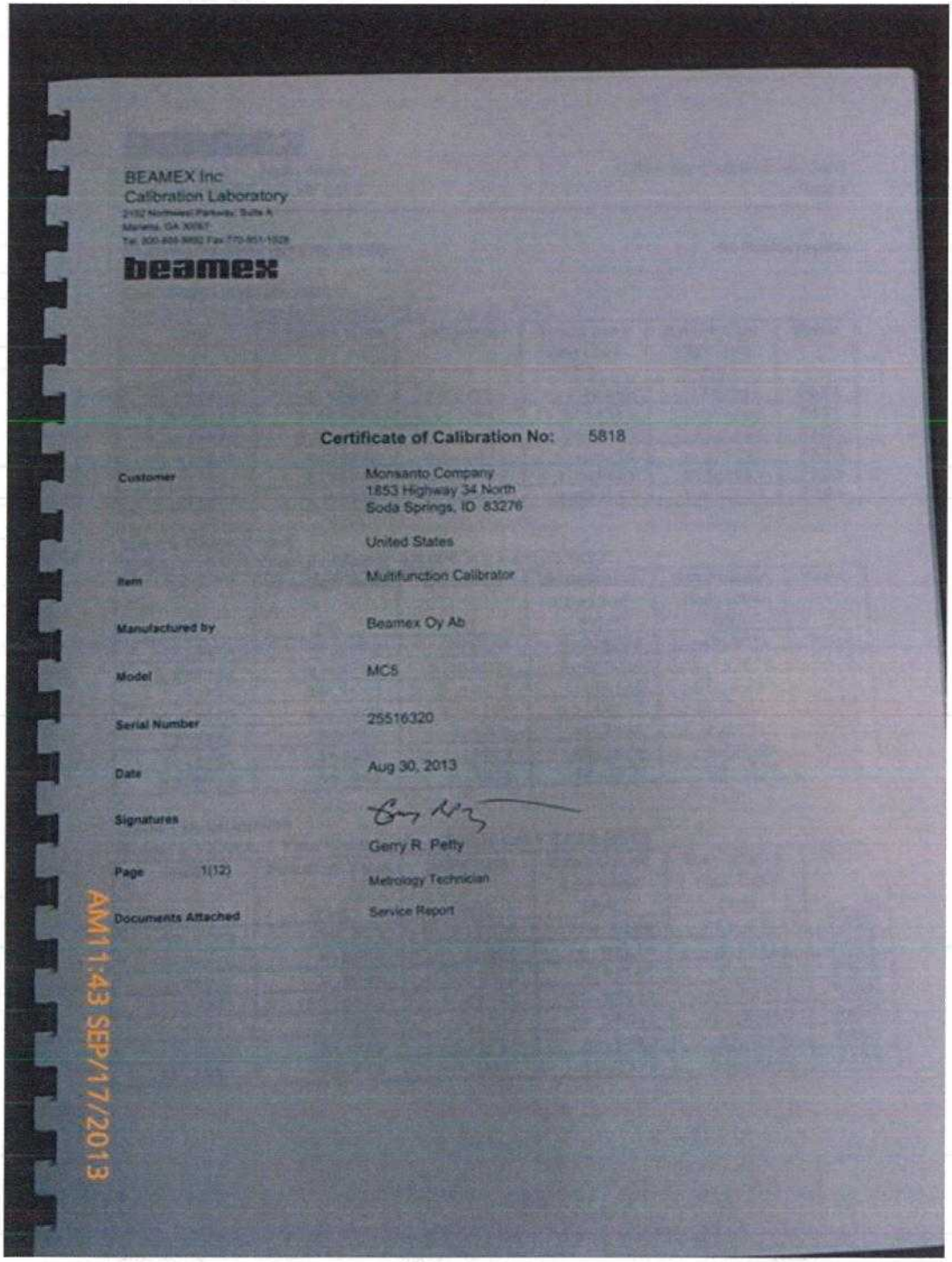


Photo No. 14 (P1000176)
An example of the detailed quarterly calibration reports prepared for site monitoring instruments (including the instruments used for monitoring compliance with the NPDES permit)



BEAMEX Inc
Calibration Laboratory
[illegible]
beamex

Certificate of Calibration No: 5818

Customer	Monsanto Company 1853 Highway 34 North Soda Springs, ID 83276 United States
Item	Multifunction Calibrator
Manufactured by	Beamex Oy Ab
Model	MC5
Serial Number	25516320
Date	Aug 30, 2013
Signatures	Gerry R. Petty
Page	1(12)
	Metrology Technician
Documents Attached	Service Report

AM11:43 SEP/17/2013

Photo No. 15 (P1000177)
An example of the detailed quarterly calibration reports prepared for site monitoring instruments (including the instruments used for monitoring compliance with the NPDES permit)

Photo No. 16 (P1000190)
P4 Production environmental engineer Molly Prickett triple-rinses the new HDPE bucket that was used to collect a single grab sample of the P4 discharge to Soda Creek.

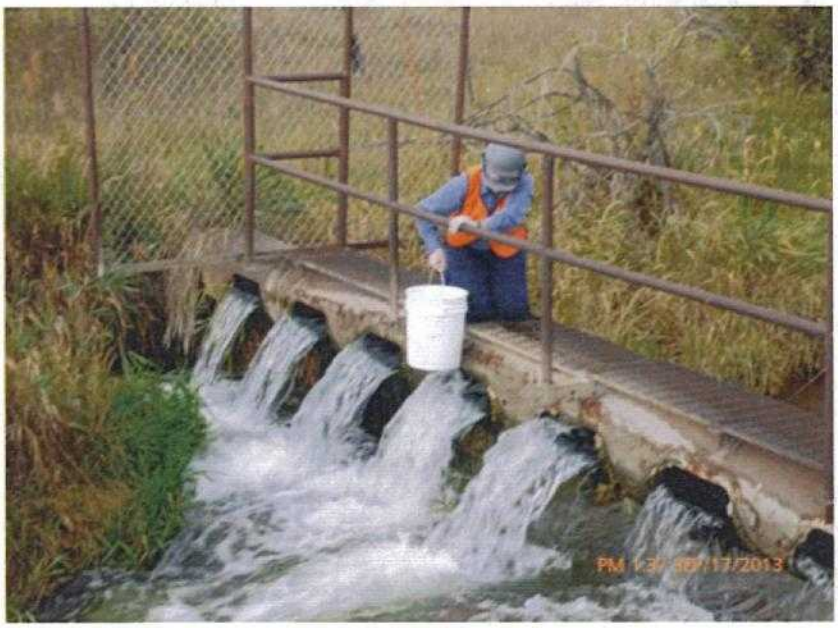


Photo No. 17 (P1000191)
P4 Production environmental engineer Molly Prickett collects a single grab sample of the P4 discharge to Soda Creek.

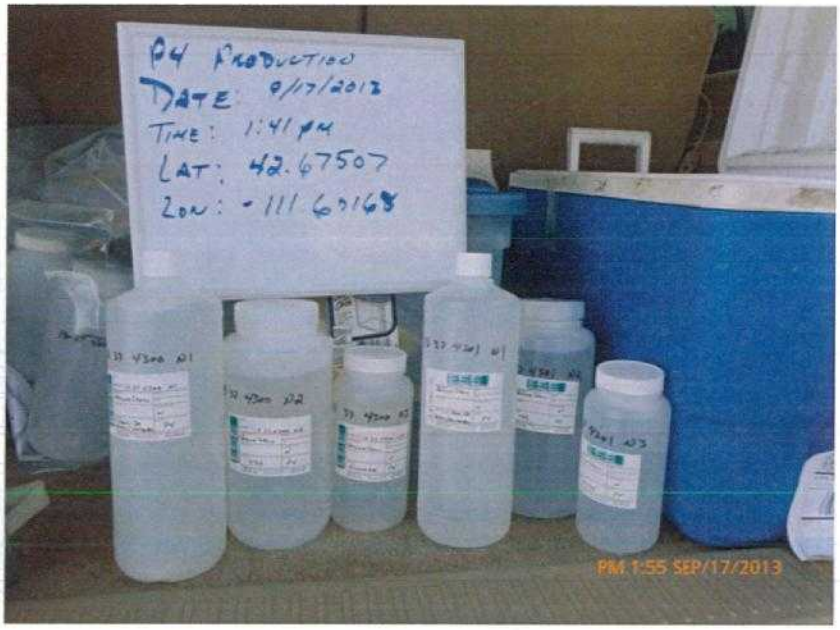


Photo No. 18 (P1000193)
Two sets of samples were collected from the single grab sample (original and a duplicate) collected at the discharge location.

Photo No. 19 (P1000196)
Samples were packaged with ice, sealed with evidence tape, and placed in a cooler for shipment to the MEL lab; the Chain of Custody form was placed in a plastic bag affixed to the inside of cooler lid.

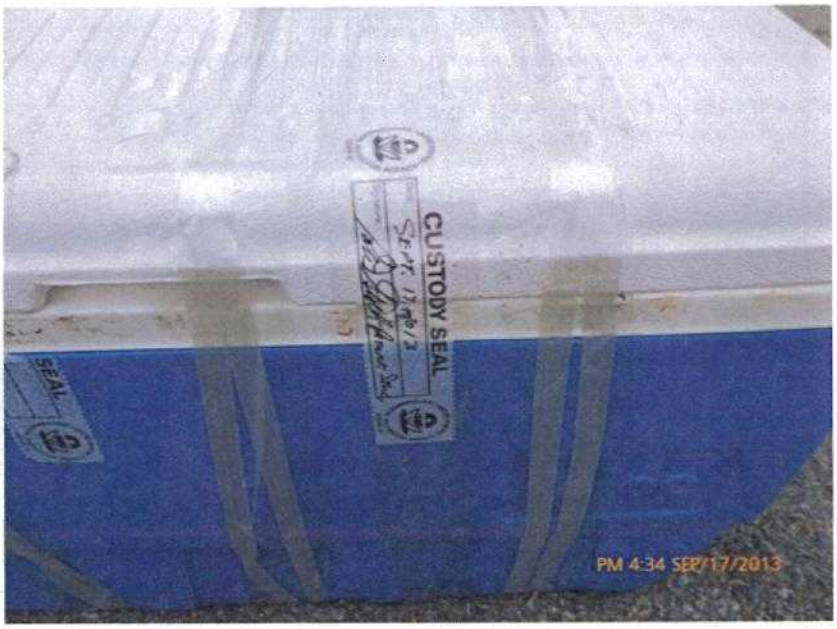


Photo No. 20 (P1000198)
The cooler with samples was sealed with strapping and evidence tape (Custody Seal) prior to delivery to UPS.

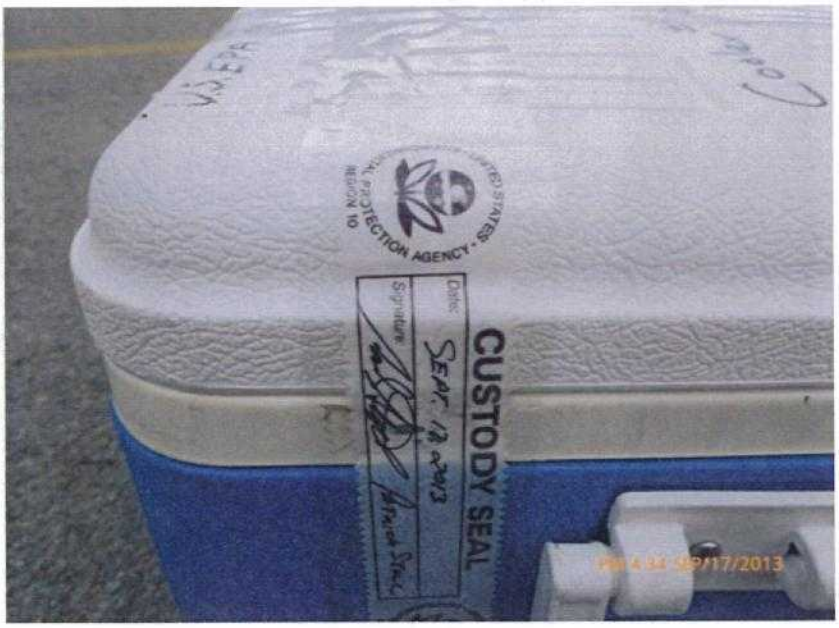


Photo No. 21 (P1000199)
The cooler with samples was sealed with strapping and evidence tape (Custody Seal) prior to delivery to UPS.

Appendix B

Miscellaneous Inspection Documents

- Instrument Calibration Documents
- Stormwater Collection Basin Analytical Results
- Boiler Scale Inhibitor Information

CALIBRATION CERTIFICATE

Printed: 17.09.2013 11:37:39
Printed by: KEVEN NIELD

Certificate Number:

POSITION ID: FIT1103-2

POSITION

Position Name:	EFFLUENT WATER FLOW (FT110-2)
Work Order Number:	50022229
Location:	Effluent Pond
Plant Structure:	South/Water/Effluent Water/FR110-2/

DEVICE

Device ID:	FT1103-2		
Serial Number:	257-GD		
Manufacturer Model:	Milltronics MULTIRANGER PLUS		
Operating Range:	1-50 FEET		
Operating Temp.:	-5-122 F	Humidity:	

FUNCTION

Function:	Level Indicator (li)		
Transfer Function:	Linear		
Range (I/O):	1,729.50 to 2,561.60 %	1,729.50 to 2,561.60 %	

CALIBRATION EVENT

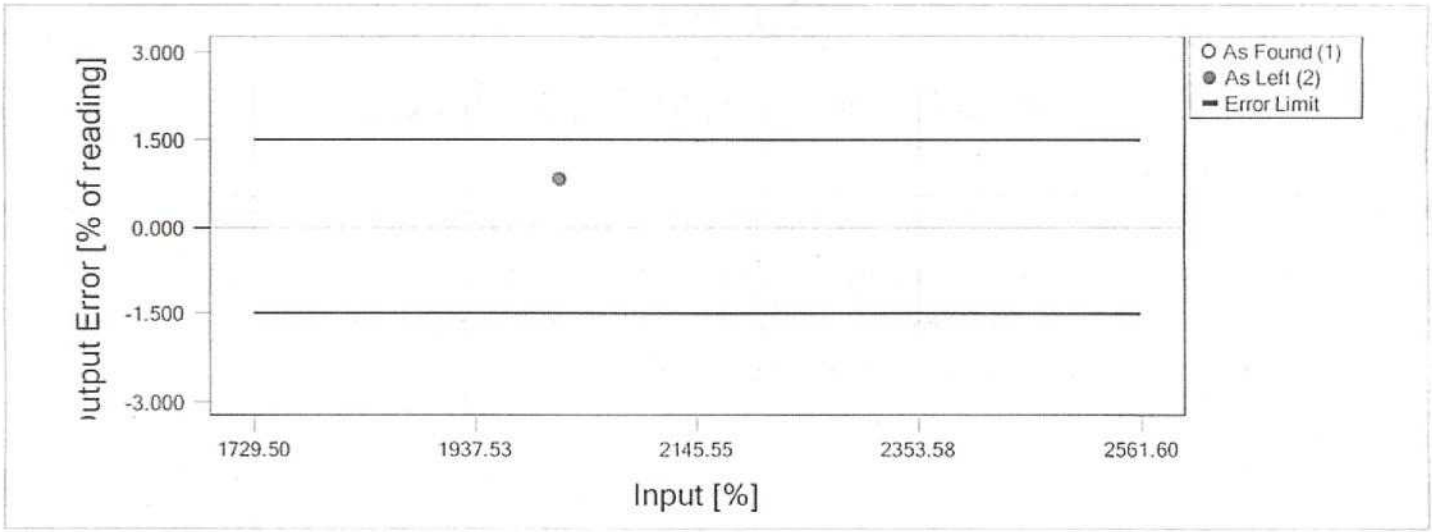
Calibration Date:	9/11/2013 10:12:00 AM		
Next Cal. Date:	12/12/2013		
Environment Temp.:	0.00	Humidity:	0.00 %

PROCEDURE

Due Date:	12/12/2013	Interval:	92 days
Reject if Error >:	1.50 % of reading	Adjust To <:	0.00 % of reading
Classification:	A		
Calibration Strategy:	Quality system calibrations		

CALIBRATORS

Input Calibrator:	Due Date:
Input Module:	Due Date:
Output Calibrator:	Due Date:
Output Module:	Due Date:



1. As Found — PASSED

Max Error: 0.84 % of reading

Nominal Input [%]	Actual Input [%]	Nominal Output [%]	Actual Output [%]	Found Error [% of reading]
2145.55	2016	2145.55	2033	0.843

2. As Left — PASSED

Max Error: 0.84 % of reading

Nominal Input [%]	Actual Input [%]	Nominal Output [%]	Actual Output [%]	Found Error [% of reading]
2145.55	2016	2145.55	2033	0.843

Calibration Note:

Calibrated by: JC Price
9/11/2013 10:12:00 AM

30 Approved:

CALIBRATION CERTIFICATE

Printed: 17.09.2013 11:37:39
Printed by: KEVEN NIELD

Certificate Number:

POSITION ID: FR1103-1

POSITION

Position Name:	EFFLUENT WATER FLOW (FR110-2)
Work Order Number:	50022228
Location:	EFFULENT POND SHACK
Plant Structure:	South/Water/Effluent Water/FR110-2/

DEVICE

Device ID:	FR1103-1
Serial Number:	S5F606687 (FLOW)
Manufacturer Model:	Yokagawa 436002-e2
Operating Range:	20mv-20v
Operating Temp.:	Humidity:

FUNCTION

Function:	Electrical Recorder Flow Display (erf)		
Transfer Function:	Linear		
Range (I/O):	1.00 to 5.00 V	0.00 to 5,000.00 gpm	

CALIBRATION EVENT

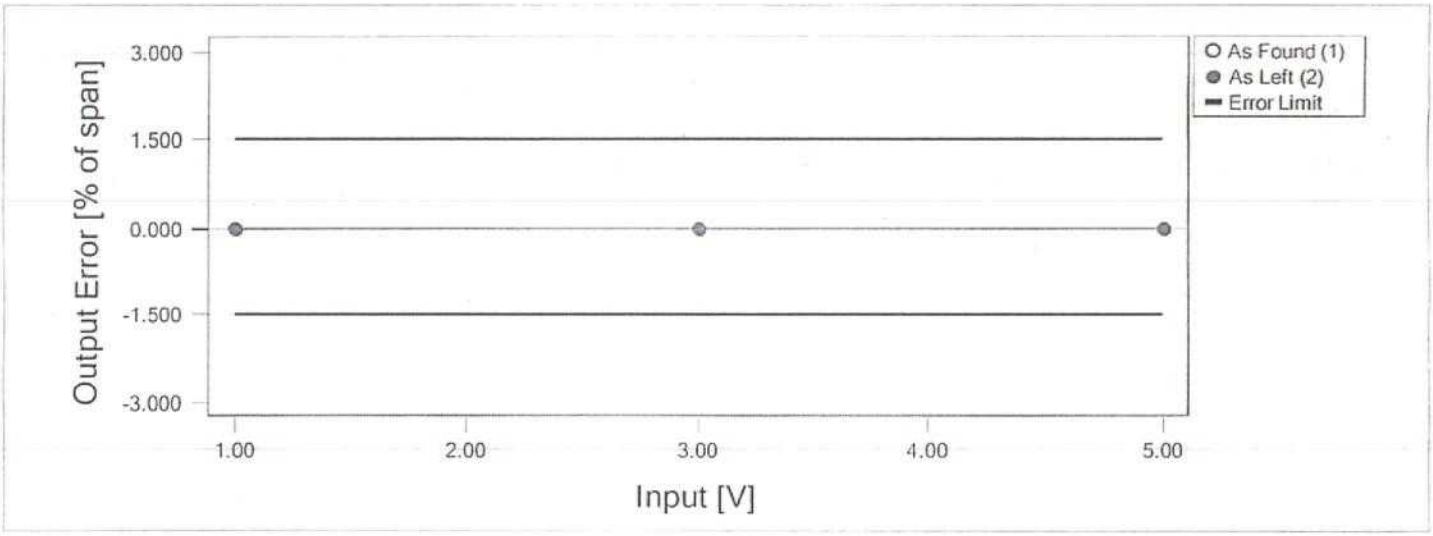
Calibration Date:	9/11/2013 9:39:00 AM	
Next Cal. Date:	12/11/2013	
Environment Temp.:	0.00 °F	Humidity: 0.00 %

PROCEDURE

Due Date:	9/12/2013	Interval:	3 months
Reject if Error >:	1.50 % of span	Adjust To <:	0.00 % of span
Classification:	A		
Calibration Strategy:	Quality system calibrations		

CALIBRATORS

Input Calibrator:	MC5 s/n: 25516320	Due Date: 8/30/2014
Input Module:	ET s/n: 56542	Due Date: 8/30/2014
Output Calibrator:		Due Date:
Output Module:		Due Date:



1. As Found — PASSED

Max Error: -0.02 % of span

Nominal Input [V]	Actual Input [V]	Nominal Output [gpm]	Actual Output [gpm]	Found Error [% of span]
1.00	1.00000	0.000	0.000	0.00000
3.00	3.0000	2500	2500	0.00000
5.00	5.0000	5000	4999	-0.02000
1.00	1.00001	0.000	0	-0.00025

2. As Left — PASSED

Max Error: -0.02 % of span

Nominal Input [V]	Actual Input [V]	Nominal Output [gpm]	Actual Output [gpm]	Found Error [% of span]
1.00	1.00000	0.000	0.000	0.00000
3.00	3.0000	2500	2500	0.00000
5.00	5.0000	5000	4999	-0.02000
1.00	1.00001	0.000	0	-0.00025

Calibration Note:

Calibrated by: JC Price
9/11/2013 9:39:00 AM

Approved:

CALIBRATION CERTIFICATE

Certificate Number:

Printed: 17.09.2013 11:31:55
Printed by: KEVEN NIELD

POSITION ID: TE1103-1

POSITION

Position Name:	EFFLUENT WATER TEMPERATURE (TE110-1)
Work Order Number:	50018166
Location:	EFFLUENT POND
Plant Structure:	South/Water/Effluent Water/TR110-1/

DEVICE

Device ID:	TE1103-1	
Serial Number:	89	
Manufacturer Model:	Omega TJ36-ICSS-14U-12-BX	
Operating Range:		
Operating Temp.:		Humidity:

FUNCTION

Function:	Temperature Sensor (te)	
Transfer Function:	Linear	
Range (I/O):	50.00 to 100.00 °F	50.00 to 100.00 °F

CALIBRATION EVENT

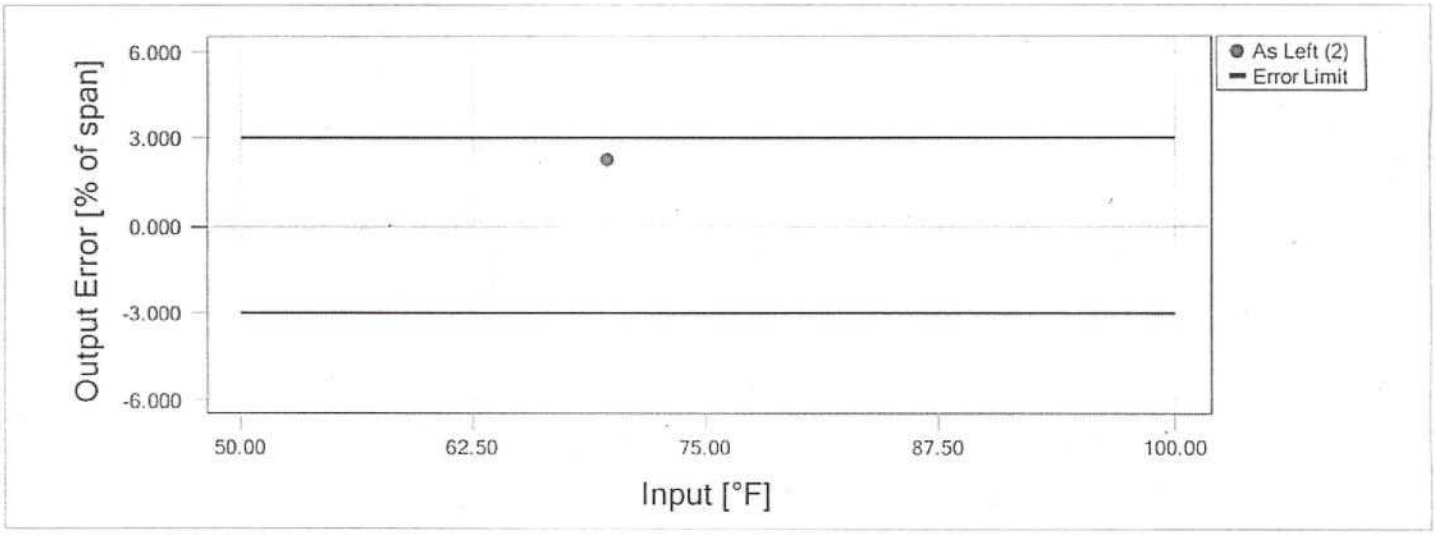
Calibration Date:	9/11/2013 9:50:00 AM	
Next Cal. Date:	12/11/2013	
Environment Temp.:	0.00 °F	Humidity: 0.00 %

PROCEDURE

Due Date:	9/12/2013	Interval:	3 months
Reject if Error >:	3.00 % of span	Adjust To <:	0.00 % of span
Classification:	A		
Calibration Strategy:	Quality system calibrations		

CALIBRATORS

Input Calibrator:	MC5 s/n: 25516320	Due Date: 8/30/2014
Input Module:	ET s/n: 56542	Due Date: 8/30/2014
Output Calibrator:		Due Date:
Output Module:		Due Date:



2. As Left — PASSED

Max Error: 2.26 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
75.00	69.67	75.00	70.8	2.2600

Calibration Note:

Calibrated by: JC Price
9/11/2013 9:50:00 AM

Approved:

IAS EnviroChem

3314 Pole Line Rd. • Pocatello, ID 83201
Phone: (208) 237-3300 • Fax: (208) 237-3336
email: iasec3308@iasenvirochem.com • www.iasenvirochem.com

P4 Production-Dawn Blevins
Dawn R. Blevins
1853 Hwy. 34
Soda Springs, ID 83276

Date Submitted: 01/21/2011
Date Reported: 02/10/2011

Certificate of Analysis

Sample Description: O/W Sediment
Lab Tracking #: I101092-02
Sampling Date/Time: 01/20/11 11:15

Analyte	*Result*	*Units*	*PQL*	*Analysis Date*	*Analyst*	*Method*	*Qualifier*
Diesel	32.0	mg/kg	25	2/7/2011	MAH	8015Bmod	
Lube Oil	ND	mg/kg	100	2/7/2011	MAH	8015Bmod	
Gasoline	ND	mg/kg	5	1/31/2011	CAS	8015Bmod	

Surrogate Summary

Surrogate Standard	*Method*	*Percent Recovery*	*Control Limits*
Hexacosane	8015Bmod	92.40 %	50-150
4-Bromofluorobenzene	8015Bmod	104.0 %	70-130

ND = Not Detected
PQL = Practical Quantitation Limit

SUB - AT 125

G. Ryan Pattie
Laboratory Director

ND = Not Detected

IAS EnviroChem

3314 Pole Line Rd. • Pocatello, ID 83201
Phone: (208) 237-3300 • Fax: (208) 237-3336
email: iasec3308@iasenvirochem.com • www.iasenvirochem.com

P4 Production-Dawn Blevins
Dawn R. Blevins
1853 Hwy. 34
Soda Springs, ID 83276

Date Submitted: 01/21/2011
Date Reported: 02/10/2011

Certificate of Analysis

Sample Description: O/W Sediment
Lab Tracking #: I101092-02
Sampling Date/Time: 01/20/11 11:15

Analyte	*Result*	*Units*	*Method*	*Analyzed*	*Analyst*
% Moisture	28.7	%	Grav	01/24/2011	MPH
Ignitability	Neg	N/A	EPA 1030	02/09/2011	BWH
TCLP Arsenic	< 0.05	mg/L	1311/6020A	01/27/2011	RP
TCLP Barium	0.37	mg/L	1311/6020A	01/27/2011	RP
TCLP Cadmium	< 0.05	mg/L	1311/6020A	01/27/2011	RP
TCLP Chromium	< 0.05	mg/L	1311/6020A	01/27/2011	RP
TCLP Lead	< 0.05	mg/L	1311/6020A	01/27/2011	RP
TCLP Mercury	< 0.01	mg/L	1311/6020A	01/27/2011	RP
TCLP Selenium	< 0.05	mg/L	1311/6020A	01/27/2011	RP
TCLP Silver	< 0.05	mg/L	1311/6020A	01/27/2011	RP
Total Aluminum	7067.0	ppm	ICP MS	01/27/2011	RP
Total Antimony	0.77	ppm	ICP MS	01/27/2011	RP
Total Arsenic	3.52	ppm	IPC MS	01/27/2011	RP
Total Barium	111.75	ppm	ICP MS	01/27/2011	RP
Total Beryllium	0.69	ppm	ICP MS	01/27/2011	RP
Total Cadmium	33.81	ppm	ICP MS	01/27/2011	RP
Total Calcium	148700.0	ppm	ICP MS	01/27/2011	RP
Total Chromium	91.05	ppm	ICP MS	01/27/2011	RP
Total Cobalt	3.04	ppm	ICP MS	01/27/2011	RP
Total Copper	43.47	ppm	ICP MS	01/27/2011	RP
Total Iron	5353.0	ppm	ICP MS	01/27/2011	RP
Total Lead	11.32	ppm	ICP MS	01/27/2011	RP
Total Magnesium	6200.0	ppm	ICP MS	01/27/2011	RP
Total Manganese	120.95	ppm	ICP MS	01/27/2011	RP
Total Mercury	0.4	ppm	ICP MS	01/27/2011	RP
Total Nickel	22.15	ppm	ICP MS	01/27/2011	RP
Total Phosphate as P	3.13	%	Gravimetric	01/26/2011	GRP
Total Potassium	1522.5	ppm	ICP MS	01/27/2011	RP
Total Selenium	4.52	ppm	ICP MS	01/27/2011	RP
Total Silver	2.19	ppm	ICP MS	01/27/2011	RP
Total Sodium	1252.5	ppm	ICP MS	01/27/2011	RP
Total Thallium	0.31	ppm	ICP MS	01/27/2011	RP
Total Vanadium	160.20	ppm	ICP MS	01/27/2011	RP
Total Zinc	429.95	ppm	ICP MS	01/27/2011	RP

G. Ryan Pattie
Laboratory Director

ND = Not Detected

IAS EnviroChem 3314 Pole Line Road Pocatello, Idaho 83201 (208) 237-3300 FAX (208) 237-3336 e-MAIL iasec3308@iasenvirochem.com

Company Name: P4 Production, LLC

Address: 1853 Highway 34 North

City: Soda Springs State: ID Zip: 83276

Phone: 208-547-1274 P.O. # 4509880443

SPECIAL INSTRUCTIONS: Samples are not preserved. Turnaround time of 2 weeks. Please e-mail results to Dawn Blevins at dawn.r.blevins@monsanto.com or fax to 547-3312.

SAMPLE INFORMATION

TRK # (Lab use only)	Sample Description	Date/Time Collected		Number of Containers	TAL (Target Analyte List) Metals	TCLP (RCRA 8) Metals	Total Phosphorus	BOD/COD	TCL (Target Compound List) VOA	TCL (Target Compound List) SVOA	Percent Water	Total Solids	Density	Specific Gravity	Flashpoint	TCLP VOA	TCLP SVOA	Corrosivity (ASTM Method)	BTUs	PCBs	TPH-Dx	TPH-Gx	Comments
	Reactor Sand	01/20/11	10:00	1	X	X					X												
	O/W Sediment	01/20/11	11:15	2	X	X	X								X						X	X	

35

I101092
Monsanto
Received: 01/21/2011
BW11

RELINQUISHED BY

Signature: Bret Thompson

Printed Name: [illegible]

Date/Time: 1-21-11 1:25 PM

RECEIVED BY

Signature: [illegible]

Printed Name: [illegible]

Date/Time: 1/21/11 1325

18.9°C

Lab Use Only

Received Intact?	YES	NO
Labels and Chain Agree?	YES	NO
Container Sealed?	YES	NO

P_4 Production, LLC

Soda Springs Plant
1853 Highway 34
P.O. Box 816
Soda Springs, Idaho 83276-0816
Phone: (208) 547-4300
Fax: (208) 547-3312

October 11, 2012

CERTIFIED MAIL
RETURN RECEIPT – 7012 1010 0000 2553 8043

NPDES Unit Manager, OW-133
U. S. EPA Region 10
12000 Sixth Avenue
Seattle, WA 98101

Dear Mr. KenKnight:

P_4 Production LLC is providing this letter to notify the Environmental Protection Agency (EPA) that the currently used non-contact cooling-water treatment chemical, sodium hexametaphosphate (SHMP), will be replaced. P_4 Production LLC intends to replace SHMP with Nalco 3D Trasar® 3DT120.

Nalco 3D Trasar® 3DT120 is a proprietary polymer cooling water treatment chemical that is formulated to control calcium, iron, and other suspended solids in high stress cooling water systems. The material safety data sheet (MSDS) is attached for reference. As shown in Section 15 of the MSDS, Nalco performed numerous evaluations of its product to determine regulatory compliance. During the regulatory review, Nalco determined that the product does not contain any substances on the List of Toxic Chemicals (40 CFR 372). In addition, Nalco also evaluated the product for adherence to the Federal Water Pollution Control Act. The evaluation determined that the product may contain trace levels (less than 1%) of sodium bisulfate and sulfuric acid.

For our process, Nalco 3D Trasar® 3DT120 will be added to the cooling water to obtain a concentration of 500 parts per billion (ppb). Assuming the two trace level chemicals are not destroyed during the cooling process and are discharged at 1% of 500 ppb (assumed from the MSDS), this equates to 5 ppb for each chemical listed. Although the calculated 5 ppb discharge is less than the 100 ppb

notification limit described in the General Requirements Section (IV.A) of our NPDES permit, P4 Production LLC is providing this notification for EPA's records.

If there are any questions on this chemical replacement, please do not hesitate to contact me via phone at 208-547-1292 or e-mail darsen.gaughan@monsanto.com with any questions.

Thank You,

Darsen Gaughan, P.E.
Environmental Engineer

Cc: Mr. Bruce Olenick, Regional Administrator, DEQ, Pocatello, Idaho

Bcc: (Electronic)
D. Gaughan
Randy White
Allegra Belknap
Jim McCulloch

Bcc: (Paper)
Environmental Contact File: 2012 NPDES

NALCO

SAFETY DATA SHEET

PRODUCT

3D TRASAR® 3DT120

EMERGENCY TELEPHONE NUMBER(S)
(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **3D TRASAR® 3DT120**

APPLICATION : COOLING WATER TREATMENT

COMPANY IDENTIFICATION : Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING
HEALTH : 0 / 1 FLAMMABILITY : 1 / 1 INSTABILITY : 0 / 0 OTHER : 0
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

CAUTION
May cause irritation with prolonged contact.
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.
Wear suitable protective clothing.
May evolve oxides of carbon (COx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin, Inhalation

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.

INGESTION :
Not a likely route of exposure. May cause gastrointestinal irritation.

INHALATION :
Not a likely route of exposure. No adverse effects expected.

SYMPTOMS OF EXPOSURE :
Acute :
A review of available data does not identify any symptoms from exposure not previously mentioned.
Chronic :
A review of available data does not identify any symptoms from exposure not previously mentioned.

HUMAN HEALTH HAZARDS - CHRONIC :
No adverse effects expected other than those mentioned above.

4. FIRST AID MEASURES

EYE CONTACT :
Flush affected area with water. If symptoms develop, seek medical advice.

SKIN CONTACT :
Flush affected area with water. If symptoms develop, seek medical advice.

INGESTION :
Get medical attention. Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink.

INHALATION :
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : Not applicable

EXTINGUISHING MEDIA :
Water, Carbon dioxide, Dry powder, Foam
This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :
May evolve oxides of carbon (COx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible.

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water., Prevent material from entering sewers or waterways., If drains, streams, soil or sewers become contaminated, notify local authority.

7. HANDLING AND STORAGE

HANDLING :
Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

STORAGE CONDITIONS :
Store in suitable labeled containers. Store the containers tightly closed.

UNSUITABLE CONSTRUCTION MATERIAL :
Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :
This product does not contain any substance that has an established exposure limit.

ENGINEERING MEASURES :
General ventilation is recommended.

RESPIRATORY PROTECTION :
Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. A suitable filter material depends on the amount and type of chemicals being handled. Consider the use of filter type: Multi-contaminant cartridge. with a Particulate pre-filter. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If

respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :
When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled, but we have positive experience under light handling conditions using gloves made from PVC Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers.

SKIN PROTECTION :
See general advice.

EYE PROTECTION :
Wear safety glasses with side-shields.

HYGIENE RECOMMENDATIONS :
Use good work and personal hygiene practices to avoid exposure. Consider the provision in the work area of a safety shower and eyewash. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

HUMAN EXPOSURE CHARACTERIZATION :
Based on our recommended product application and personal protective equipment, the potential human exposure is:
Low

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Yellow
ODOR	Neutral

SPECIFIC GRAVITY	1.113 - 1.149
SOLUBILITY IN WATER	Complete
pH (100 %)	2.4 - 3.6
VISCOSITY	39.93 - 42.69 cst
POUR POINT	28.4 °F / -2.0 °C
VOC CONTENT	0.0 % Calculated

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Extremes of temperature

MATERIALS TO AVOID :
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Bases Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors. SO2 may react with vapors from neutralizing amines and may produce a visible cloud of amine salt particles.

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

The following results are for the product, unless otherwise indicated.

ACUTE ORAL TOXICITY :
Species: Rat
LD50: 5,000 mg/kg
Test Descriptor: Similar Product

ACUTE DERMAL TOXICITY :
Species: Rabbit
LD50: > 2,000 mg/kg
Test Descriptor: Similar Product

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product, unless otherwise indicated.

ACUTE FISH RESULTS :

Species	Exposure	LC50	Test Descriptor
Bluegill Sunfish	96 hrs	> 5,000 mg/l	Similar Product
Rainbow Trout	96 hrs	> 8,000 mg/l	Product

Inland Silverside	96 hrs	3,736 mg/l	Similar Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	LC50	EC50	Test Descriptor
Daphnia magna	48 hrs	1,339 mg/l		Product
Mysid Shrimp (Mysidopsis bahia)	96 hrs	3,750 mg/l		Similar Product

PERSISTENCY AND DEGRADATION :

Total Organic Carbon (TOC) : 120,000 mg/l

Chemical Oxygen Demand (COD) : 300,000 mg/l

Biological Oxygen Demand (BOD) :

Incubation Period	Value	Test Descriptor
5 d	175 mg/l	Product

The organic portion of this preparation is expected to be poorly biodegradable.

MOBILITY :
The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	10 - 30%	70 - 90%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL
This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is:
Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

CERCLA/SUPERFUND, 40 CFR 302 :
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :
This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

NSF NON-FOOD COMPOUNDS REGISTRATION PROGRAM (former USDA List of Proprietary Substances & Non-Food Compounds) :
NSF Registration number for this product is : 141583
This product is acceptable for treatment of cooling and retort water (G5) in and around food processing areas.

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :
This product may contain trace levels (<0.1% for carcinogens, <1% all other substances) of the following substance(s) listed under the regulation. Additional components may be unintentionally present at trace levels.

Substance(s)	Citations
• Sodium Bisulfite • Sulfuric Acid	Sec. 311

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :
Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :
Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :
Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :
Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

INTERNATIONAL CHEMICAL CONTROL LAWS :

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on the Inventory of Existing Chemical Substances China (IECSC).

EUROPE
The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996,and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

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